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10/731,462	12/09/2003	Lilia P. Burleva	87416JLT	5805

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EXAMINER

CHEA, THORL

ART UNIT PAPER NUMBER

1752

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/731,462

Applicant(s)

BURLEVA ET AL.

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-23 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03312005.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-13, 15-17, 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Winslow et al (US Patent No. 5,891,615), Riester et al (US Patent No. 3,895,951), Uytterhoeven et al (US Patent No. 6,274,297) and Morgan et al (US Patent No. 3,457,075).

Winslow et al discloses a process substantially as claimed. See the process for preparing a photothermographic emulsion in columns 50-52, claims 1-19 wherein the process comprising the the step of providing the silver halide grains and a non-photosensitive silver source, and chemically sensitize the silver halide grains by decomposing the organic sulfur-containing compound in an oxidizing environment such as piridinium hydrobromide perbromide compound; the hydrobromic acid salts of nitrogen-containing heterocyclic rings compound in column 9, lines 55-67 to column 9, line 1-2.; the process of forming silver halide by "in-situ" and "ex-situ" in column 3, lines 15-55; the photothermographic constructions in column 19, lines 57-67 to column 20; the photographic emulsions and photothermographic material in Examples 1-34 in column 1-50; the silver halide including silver bromide in column 12, lines 45-55; and the sulfur containing compound known as merocyanine dye in columns 11-12. In the process of forming the photographic emulsion in column 27, the preformed silver halide

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emulsion, full silver dispersion soap, the chemically spectrally sensitizing dye (CS-1) and pyridinium hydrobromide perbromide, and binder such as Butvar are used. In column 13, lines 37-50, it is disclosed that it is effective to use an in situ process, i.e., in which a halogen-containing compound is added to an organic silver salt to partially convert the silver of the organic silver salt to silver halide.

Riester a phosphine sulfide to increase and stabilize the silver halide emulsion that spectrally sensitizes with a merocyanine dye. See the compounds in column 1, lines 55-60, the description of the substituents associated therewith especially the group such as $-\text{NH}-\text{CO}-$ in column 2, lines 40-45, exemplified compound in columns 3-10, especially the compound of formula 7, in column 3 which same as the compound PS-15 claimed in claim 15. Thus, Riester discloses the compound having a phosphine sulfide compound including the compound used in the present claimed invention. Morgan in column 3, lines 65-75 to column 4, lines 1-22 discloses the formation of silver bromide by in situ using source of halide ion such as ammonium bromide with silver ions of organic silver salt. It discloses that "surprisingly, the in situ formation of silver chloride or bromide, by reaction of halide ion with silver ions of organic silver salt, enhances the image forming capability of the composition enormously, and by far beyond anything available by simple addition of preformed silver halide, so that a true photographic or picture-taking capability is made possible. Uytterhoeven et al (US Patent No. 6,274,297) discloses silver halide made in ex-situ in combination with that made in-situ to provide a photothermographic material with an increase of sensitivity and contrast. See columns 19-20, Table 4 and columns 26-28, claims 1-28.

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Winslow et al discloses a process substantially as claimed except the use of sulfur-containing compound of formula (PS), but the compound has been known in Riester et al that the phosphine sulfide to increase and stabilize the silver halide emulsion that spectrally sensitizes with a merocyanine dye. Moreover, it has been known in Morgan that the formation of silver bromide by in situ using source of halide ion such as ammonium bromide with silver ions of organic silver salt. It discloses that "surprisingly, the in situ formation of silver chloride or bromide, by reaction of halide ion with silver ions of organic silver salt, enhances the image forming capability of the composition enormously, and by far beyond anything available by simple addition of preformed silver halide, so that a true photographic or picture-taking capability is made possible, and it has been known in Uytterhoeven et al to use a combination of the photosensitive silver halide made by in-situ and ex-situ to increase the sensitivity of the photothermographic material. It would have been obvious to the art the time the invention was made to use the sulfur-containing compound taught Riester et al to increase and stabilize the silver halide spectrally sensitize with merocyanine dye taught in Winslow in combination with the process of forming silver halide made by ex-situ and in-situ taught in Uytterhoeven and the in situ process of silver halide taught in Morgan with an expectation of achieving a surprising image forming capability and increasing the sensitivity of photothermographic material and thereby provide a process as claimed.

3. Claims 14, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Winslow et al (US Patent No. 5,891,615), Riester et al (US Patent No. 3,895,951), Uytterhoeven et al (US Patent No. 6,274,297), and Morgan et al (US Patent No.

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3,457,075 as applied to claims 1-13, 15-17, 19-23 above, and further in view of Simpson et al (US Patent No. 6,440,649).

Simpson et al discloses the use of a phosphor to provide an increase imaging sensitivity and image contrast of a photothermographic material. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a phosphor taught in Simpson et al in the photothermographic emulsion obtained by a combination of Winslow et al (US Patent No. 5,891,615), Riester et al (US Patent No. 3,895,951), and Morgan et al (US Patent No. 3,457,075), and thereby provide a process as claimed.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 5,891,615 (Winslow et al) in view of Morgan et al (US Patent No. 3,457,075), Uytterhoeven et al (US Patent No. 6,274,297) and Riester et al (US Patent No. 3,895,951). The invention claimed in Winslow et al may not include the step of converting some of the reducible silver ions in said non-photosensitive silver source of reducible silver ions into photosensitive silver halide grains; but, it has been known in

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Morgan discloses that "surprisingly, the in-situ formation of silver chloride or bromide, by reaction of halide ion with silver ions of organic silver salt, enhances the image forming capability of the composition enormously, and by far beyond anything available by simple addition of preformed silver halide, so that a true photographic or picture-taking capability is made possible. Uytterhoeven et al (US Patent No. 6,274,297) discloses silver halide made in ex-situ in combination with that made in-situ to provide a photothermographic material with an increase of sensitivity and contrast. See columns 19-20, Table 4 and columns 26-28, claims 1-28. Therefore, It would have been obvious to the art the time the invention was made to include the in-situ processing step known in Morgan et al and Uytterhoeven et al in the process taught in Winslow et al with a reasonable expectation of achieving a photothermographic material with surprising image forming capability, and increasing the sensitivity of the photothermographic material, and thereby provide a process as claimed. Moreover, Riester a phosphine sulfide to increase and stabilize the silver halide emulsion that spectrally sensitizes with a merocyanine dye, it would have been obvious to the art the time the invention was made to use the sulfur-containing compound taught Riester et al to increase and stabilize the silver halide spectrally sensitize with merocyanine dye claimed in Winslow et al, and thereby provide a process as claimed.

Response to Arguments

6. Applicant's arguments filed April 28, 2005 have been fully considered but they are not persuasive for the reason set forth in the rejection above.

It is the Examiner's position that the references are properly combined. Riester et al discloses phosphine sulfides compound including the diphenylphosphine sulfides to increase the

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sensitivity the silver halide emulsions. The silver halide emulsions has been known to be used in both wet developable material and heat developable material. The heat developable material contains a small amount of silver halide emulsion which serve as photocatalyst. The speed of wet developable material and dry silver developable material depends on the speed of the formation of latent image in the silver halide emulsion. The phosphine sulfides compound taught in Riester et al increases the sensitivity and the stabilize silver halides silver halide emulsion. Therefore, it would have been obvious to the worker of ordinary skill in the art to increase the sensitivity of the silver halide grains taught in Winslow et al (US Patent No. 5,891,615). In response to applicant's argument that all three references are improperly combined (nonanalogous art), it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, it would have been obvious to use the compound taught in Riester et al to increase the silver halide emulsion, thereby improving the sensitivity of the photosensitive material including photothermographic material.

The applicants argue that the present claimed invention is related to "the chemically sensitizing the preformed photosensitive silver halide grains by decomposing the diphenylphosphine sulfide compound on or around the preformed photosensitive silver halide grains in oxidizing environment to provide a photothermographic emulsion comprising chemically sensitized preformed photosensitize silver halide grains in reaction association with non-photosensitive silver source of reducible silver ions" which is different from the conventional process taught in

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Riester et al. The argument is not well taken since the steps of decomposing the sulfur compound has been known in Winslow et al, and the worker of ordinary skill in the art at the time the invention was made to include the sulfur compound in the process of Winslow et al with an expectation of providing similar results. Winslow et al in columns 10-11 discloses different type of sulfur containing source of chemical sensitization compound that contains a sulfur compound that decompose to chemically sensitize silver halide including merocyanine dye that has been known as spectral sensitizing dye for silver halide emulsion. Therefore, it would have understood by the worker of ordinary skill in the art at the time the invention was made to use any sulfur-containing compound in the process of Winslow et al with an expectation of chemically sensitize the silver halide emulsion taught therein.

The Declaration under 37 CFR 1.132 on April 28, 2005 fails to obviate the prima facie case of obviousness rejection set forth above since the Declaration is not commensurate with the scope of the claimed invention. Examples 8 (pages 102-103) of the copending application US Serial No. 10/731,251 is related to the combination of a gold compound and the phosphine sulfide compound, whereas gold compound is not presented in the claimed invention. Moreover, the invention as claimed is related to a method claims, and the examples presented in the copending application is related to the claiming of a material. The Declaration fails to demonstrate the criticality of the step using the diphenylphosphine sulfide claimed in the present claimed invention in view of the teaching of the prior art of record such as Winslow et al.

The rejection under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 5,891,615 is maintained for the Declaration is insufficient to determine unexpected results of the claimed process, and the

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invention as claimed would have been obvious over the invention claimed in the U.S. Patent No. 5,891,615.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tchea *tin*
July 15, 2005

Thorl Chea
Thorl Chea
Primary Examiner
Art Unit 1752